

PAPER DETAILS

TITLE: Akran Danismanligi: Yeni Hemsirelik Öğrencilerini Güçlendirmede İç Denetim Odagini
Gelistirme Yolu

AUTHORS: E Süheyla ABAAN,Sergül DUYGULU,Esra UGUR

PAGES: 24-35

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/88611>

Peer Mentoring: A Way of Developing Internal Locus of Control to Empower New Nursing Students

Akran Danışmanlığı: Yeni Hemşirelik Öğrencilerini Güçlendirmede İç Denetim Odağını Geliştirme Yolu

(Araştırma)

Sağlık Bilimleri Fakültesi Hemşirelik Dergisi (2012) 24-35

Doç. Dr. E. Süheyla ABAAN*, Yard. Doç. Dr. Sergül DUYGULU*, Yard. Doç. Dr. Esra UĞUR**

* Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Bölümü

** Okan Üniversitesi Sağlık Bilimleri Yüksekokulu

ABSTRACT

Objective: This study investigated changes in the locus of control (LOC) of new nursing students in a Turkish University. Students were put through a mentoring program provided by senior students.

Material and Methods: Seventy-two new students are included in this twelve week, evaluative, pre- and post-test design study. Dağ's (2002) Locus of Control Scale (LOCS) for Turkish samples was used to assess their personal control beliefs. Lower scores represent an internal orientation of LOC. Following a one-day mentorship orientation program, the seventy-two senior students enrolled in the Nursing Education course were randomly assigned as peer mentors for new students. The faculty provided assistance to both mentees and mentors. Descriptive statistics (mean, standard deviation, median), Kruskal Wallis test and Wilcoxon test were used to evaluate data.

Results: The test group's LOC scores showed a decrease in score across a three-month period ($p<0.001$). The biggest difference was observed in "Personal control" and the smallest difference was observed in the area of "Belief in fate".

Conclusion: In this study, the mentorship program had a favourable effect on new students' internal LOC. Peer mentorship can provide many learning experiences for both new and senior nursing students.

Key Words: Nursing education, peer mentorship, locus of control

ÖZET

Amaç: Bu çalışmada, bir Türk üniversitesinde kendilerine son sınıf öğrencileri tarafından mentorluk uygulanan yeni hemşirelik öğrencilerinin denetim odağında oluşan değişiklikler araştırıldı.

Gereç ve Yöntem: Ön test- son test şeklinde tasarlanmış 12 haftalık bu çalışmada, okula yeni başlamış 72 hemşirelik öğrencisinin verileri değerlendirildi. Bireysel denetim inancının değerlendirilmesinde Dağ (2002) tarafından Türk toplumu için geliştirilen ve düşük puanların iç denetim odağını gösterdiği Denetim Odağı Ölçeği (DOÖ) kullanıldı. Hemşirelikte Öğretim dersi kapsamında bir günlük mentorluk oryantasyon programını takiben 72 son sınıf öğrencisi raslantısal olarak mentor olarak atandı, uygulama sırasında mentorlar ve yeni hemşirelik öğrencileri dersin öğretim elemanları tarafından desteklendi. Verilerin değerlendirilmesinde tanımlayıcı istatistikler (ortalama, standart sapma, median), Kruskal Wallis test ve Wilcoxon test kullanıldı.

Bulgular: Üç aylık dönemin sonunda test grubunun DOÖ puanlarında azalma görüldü ($p<0.001$). Sonuçlardaki en büyük değişim "Bireysel kontrol" ve en küçük değişim ise "Kadere inanmak" alt boyutunda gözlemlendi.

Sonuç: Bu çalışmada, uygulanan mentorluk programı ile okula yeni başlayan öğrencilerin iç denetim odağı üzerinde olumlu bir etki elde edildi. Akran danışmanlığının hem yeni hem de son sınıf hemşirelik öğrencilerine birçok öğrenme deneyimi sağlayabileceği düşünüldü.

Anahtar Kelimeler: Hemşirelik eğitimi, akran danışmanlığı, denetim odağı

Introduction

The role of nurse educator involves using every opportunity to empower nursing students to become professionals and advance through the education process. An important step in this process is to begin it with students who possess positive characteristics such as an internal Locus of Control (LOC), self-efficacy, assertiveness and critical thinking. LOC is conceptualized as a person's belief about the amount of personal control one's behavior exerts over an outcome as well as the extent to which the person is self-directed. In spite of the fact that LOC had been considered a stable personality factor, Dawson¹ argued that by introducing new experiences the potential always exists for changing a person's LOC. Similarly, Cameron² has stated that researchers are moving away from emphasizing concepts of stable personality traits towards a focus on behavior change. The general consensus is that mentoring is one way of altering behaviors.

Mentoring undergraduate students can bring benefits to both mentor and mentee. As a result many universities offer official mentoring programs on a one-to-one basis or one mentor for a group of mentees (protégés). Mentoring, as a learning tool in general,^{3,4} specifically aimed at helping students make the transition to university life⁵.

Mentorship in nursing education

Mentorship is one of the most popular interventions to facilitate personal growth and development in practice and education in nursing. The use of teachers and clinicians as mentors in nursing education is widely accepted and presented in the nursing literature. Some examples of mentoring schemes that have been used include the use of elderly

volunteers and alumni, seniors or coaches in clinical placements^{6,7} and the use of nursing students' mentorship of the youth in a community⁸. However, peer mentoring has not been offered to new nursing students as much as to students in other college majors^{3-5,9,10}.

Among the studies, Scott¹¹ reports a peer mentoring experience for collegiality in one university school of nursing mostly done through electronic mentoring. Glass & Walter's¹² study demonstrated that peer mentoring among university student nurses had a strong relationship to personal and professional growth for all the participants.

Authors describe a mentor as an older, more experienced person who guides and nurtures a less experienced person^{13,14}. A mentor is someone who models, inspires, nurtures, teaches and encourages the less experienced person. A mentor has the multiple roles of being an advocate, educator, supporter and helper in setting goals among others. Mentorship is a helping relationship, which lasts until the mentee becomes independent in the defined area. In our nursing program final year (senior) students acted as peer mentors and new students who were inexperienced and undecided on nursing as a profession, were the mentees.

Mentorship is also a means of student retention in nursing schools if it is done through a formal, structured, faculty directed mentoring program¹⁵. Although retention may be a major concern for the nurse educator in developed countries, there is very little evidence in Turkey that students in nursing school have a high dropout level. In Turkey the priority is to prepare students to take control of their lives as well as to ensure they experience a smooth transition to becoming university students and making the decision on nursing as a career.

Locus of control

According to Rotter¹⁵ people can have an internal or external LOC. Rotter¹⁶ describes control orientation as lying within a range where, at the one extreme, events are typically perceived by a person as the result of luck, chance or fate; as being under the control of powerful others or as unpredictable because of the great complexity of the forces surrounding the person. At the other extreme events are perceived as being contingent upon the person's own behavior or their own relatively permanent characteristics. The first is labeled as "belief in external control" and the second as "belief in internal control"¹⁶.

Hampson¹⁷ reviews studies of students in which LOC is understood as a personality characteristic such that having an internal LOC has positive effects on independent learning, academic performance, personal satisfaction and self-efficacy. Those with an internal LOC experience less academic stress¹⁸ and show significantly lower levels of procrastination than those with an external LOC¹⁹. Neck²⁰ reviewed studies suggesting that an internal LOC is often present in highly creative people with the result that there is a significant relationship between internal LOC and individual leadership. Libert *et al.*²¹ reviewed a substantial number of LOC studies, some related to college students, and reported that internal LOC is associated with high motivation to learn, deep processing of information, higher retention of information, quicker response to teacher assignments, high levels of academic achievement, and generalized self efficacy, all of which are considered valuable for the nursing profession.

A literature search reveals a limited number of studies^{1,22-25} of LOC in nursing students, yet all of them support the importance of personal internalization strategies for nursing students. Others have a different focus. Neaves²³ found that students with an internal LOC tended to select independent responses on the decision making scale, whereas those with an external LOC selected dependent responses. Another study²⁶ verifies the relationship between internality and positive attitudes towards use of information technology by students. Ponto²⁴, showed that students with internal LOC perceived greater satisfaction on a nursing course than students with an external LOC.

Ofori & Charlton²⁷ proposed a model for factors influencing the academic performance of nursing students. They found that academic worries and internal LOC beliefs influenced seeking of support. They concluded that the encouragement of seeking support in the early stages of education is necessary and, as Leontopolou²⁸ states, is an important resource for positive student adaptation in transition to university life.

Few LOC studies of Turkish university students are available. Kukulu *et al.*²⁹ studied the effects of LOC, along with communication skills and social support, on assertiveness. They found that LOC had no direct effect; the opposite result to that reported in Lin *et al.*³⁰. This may be associated with the Turkish students being, in general, more externally focused, although this was not discussed in the study. Karayurt and Dicle³¹ also studied the relationship between LOC and the mental health status of university nursing students. First and second year students showed less internality than third and fourth year students and were also at higher risk of mental health problems. The authors suggested increased support be given from the faculty. Günüşen and Üstün's³² study on LOC and problem solving skills of nursing students at different levels of their education showed that as students' grade level increased the problem solving scores increased significantly. First year students were more externally oriented than second and fourth year students. They also report that a moderate-level significant relationship (in the positive direction) was found between locus of control scores and problem solving skills.

Very little research has investigated the LOC and mentorship link for undergraduate students. Lease³³ showed that an external LOC was associated with career decision making. However mentoring and support had been more helpful for one group of (black) students and mentoring had more impact on their decisions than for the other group of (white) students. Cameron² investigated undergraduate and graduate students' mentoring experiences, perceived mentor qualities and LOC orientation among other personal qualities. Their results, however, indicated limited support for the relationship between perceived mentoring experiences and LOC orientation. This might be due to the fact this was not an intervention study but was based on previous mentoring experiences.

Based on the evidence that an internal LOC is an important characteristic for nursing students, this study investigated the changes in new nursing student's Locus of Control in a Turkish University Baccalaureate Nursing program by means of a mentorship program. It was considered to be an initial step of empowerment in nursing through peer mentorship. Through mentorship we predicted that senior nursing students could provide accurate information on nursing to help new nursing students in making their choices about whether they wanted to study nursing. In Turkey admission to a university nursing major is based on a nationwide student selection examination and

the faculty has no voice on student selection. Some students may not be fully aware of the nursing profession's values or may not have made a decision on whether to be a nurse. An external source such as parents, teachers, a friend or an adviser may be reason they have selected nursing, rather than the choice having been the result of independent, informed, evaluative decision making. This situation suggests that many of our new nursing students could be externally oriented following Rotter's definition of LOC. A preliminary study also showed that our new nursing students had the tendency to have an external control³⁴.

Mentoring by the senior nursing students who have internalized professional values may facilitate the development of professional values in new students earlier in their education³⁵. By the development of problem solving, decision making skills, study skills, exploring learning styles, stress control and getting acquainted with the university environment, new nursing students may experience an increased senses of personal control and self-efficacy.

We also believed that being a mentor would be beneficial for senior nursing students since this experience is a student centered learning activity could increase student accountability and independence as well as sense of empowerment and self-efficacy.

Research Question

Does peer mentoring by senior students have a direct and positive effect on new nursing students' LOC scores following a 12-week mentorship? If it does, then new nursing students should score lower on an LOC scale at the end of the term.

Method

Purpose

This evaluative study aimed to investigate the changes in new nursing students' LOC scores in a Turkish university nursing program through peer mentoring by senior nursing students.

Sample and Procedure

All new nursing students (mentees) (n=100) in English preparatory school were included in this evaluative study. Twenty-eight students had late or deferred registration and were excluded from the sample. The sample was the remaining 72 new nursing students at the university's English preparatory school for the year 2004-2005, fall term. During this period these students have no access to the nursing faculty.

Fourth year (senior) nursing students served as one-to-one mentors for the 72 new nursing students. The Senior students were enrolled in the Education in Nursing Course, which included a mentorship practicum. Based on previous research and student observations, the College of Nursing, Education in Nursing Course developed a peer mentoring program beginning in 1999. During university registration each new student was informed about the mentorship program as well as the nursing faculty names and phone numbers.

To prepare the mentors for their role, senior students completed a one-day mentorship and Locus of Control orientation class. They were instructed about being a role model, as well as how to become a nurse who inspires, nurtures, teaches and encourages a mentee. They also learned how to be an advocate, an educator, a helper in setting goals, and a supporter. Mentor students were assigned randomly to mentees (new nursing students) whose names were taken from the university registrar's list. The first administration of the Locus of Control scale and questionnaire was within the second week of the semester when mentor and mentee met.

Each mentor prepared a learning contract which mentor and mentee signed and returned to faculty. When mentor and mentee met, the nature of the mentorship program was reviewed and written consent was sought. During the mentorship practicum, the mentee's knowledge, skills and attitudes towards being a nursing professional were assessed by the seniors; a process aimed at developing vocational autonomy as well as helping the mentees in transition to university life.

Expected learning outcomes for mentors were listed as collecting data about the orientation process to new environment, responsibilities, accommodation, financial resources, as well as about the values, beliefs and attitudes toward nursing. The mentorship practice included caring for a healthy person, working with a candidate to adapt to university and nursing, helping them develop an internal Locus of Control if they were external, an examination of their learning styles, problem solving and decision making ability and looking into stress reduction and study habits.

Students were expected to get together every week although this could be modified depending on the needs and convenience of both parties. During the term small group seminars were held every week with the faculty. The mentee was invited to these sessions. Faculty supervised and gave support to the mentors during this session as well as whenever they need.

Ethical Issues

University Ethical Committee approval was not necessary at the time of study since this was done as a part of a course and studying LOC is included in the practicum objectives. Confidentiality was always observed during the relationship and signing the contract was accepted as informed consent.

Instruments

The demographic data questionnaire contained information on the student's age, number of siblings, reasons for choosing nursing school, etc. The locus of control scale (LOCS) developed for Turkish university students by Dağ³⁶ was used to assess the personal control belief. The LOCS consists of 47 items on a 5-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Total scores of LOCS can range from 47 to 235. Low scores represent internal and higher scores external LOC orientation.

The internal consistency coefficient for LOCS is 0.92. Test-retest reliability evaluation for the scale is $r = 0.88$. For this study, the coefficient alpha level was 0.91. Results based on item analysis, Pearson correlations, and factor analysis showed that the LOCS was a

reliable and valid instrument for Turkish university students, and it has a simple factor structure^{31,36}.

LOCS forms five subscales. The first factor “Personal control (18 items)” is characterized by an “internal control belief on health, decision making, and life experiences”. The second “Belief in Chance (11 items)” is characterized by a “belief in the basic unordered and random nature of the world”. The third “Meaninglessness of making Efforts (10 items)” is characterized by a “belief in the worthlessness of trying for health, achievement and interpersonal relationships”. The fourth “Belief in Fate (3 items)” is characterized by “fatality beliefs”, and the fifth “Belief in an Unjust World (5 items)” is characterized by a “belief in powerlessness in social life”³⁶.

Data Analysis

The Locus of Control Scale was used to assess change in scores, once at the second week of fall term and the other at the end of the term. The SPSS 11.5 program was used for statistical analysis. In addition to descriptive analysis (mean, standard deviation, median) for the inter-group comparisons, Kruskal Wallis test was used. Differences between pre and post test measurements were indicated by Wilcoxon test. Results were evaluated at the level of significance $p < 0.05$.

The changes in problem solving skills, the decision-making process, stress management, study habits and assumed responsibility of freshmen were also investigated through written reports prepared by mentors. This paper reports only those results related with Locus of Control.

Results

Demographic data revealed that the mentees’ ages ranged from 17 to 24 (18.42 ± 1.09) and all of the students were female (100.0%). Most of the students were from the Central Anatolia region (54.5%). The majority of them (64.9%) were leaving the family home for the first time. They had an average of two siblings and 45.5% of them were the eldest child. Fifty five per cent of the students were living in dormitories and almost one third were willing to retake the Higher Education University Entrance exam. Interestingly, 37.5% wanted to choose another profession if they could do so. The reasons for choosing this program were job opportunities it opened up (47.2%), and the desire to become a nurse (31.9%).

The Wilcoxon test for paired samples showed statistical differences between first and second LOCS scores (Table 1). The mean of the total LOCS score for first measurement was 115.90 ± 26.66 and 95.97 ± 21.75 for the second one. Considering that total score of LOCS can range from 47 to 235 and that low scores represent internal and higher scores external LOC orientation, the second LOCS score suggested that students showed more internality. Sixty-two students showed a decrease in their total LOCS scores. The biggest difference was observed in “Personal control” and the smallest difference was observed in the area of “Belief in fate”.

There were no statistically significant differences for pre-test and post-test LOCS scores among groups for age ($p=0.230$), number of siblings ($p=0.347$), birth rank in the family ($p=0.103$) or region of residence ($p=0.853$).

Table 1. Comparison of first and second locus of control scale (LOCS) scores (N=72)

	Pre-test		Post-test		Mean Difference	P
	Mean±SD	Median	Mean±SD	Median		
Personal control	42.23±13.76	39	36.66±11.29	36	6.97	<0,001
Belief in chance	28.91±7.5	29	24.44±6.82	25	4.92	<0,001
Meaninglessness of making an effort	23.05±8.27	23	19.35±6.76	17	4.91	<0,001
Belief in Fate	10.03±3.53	11	8.84±3.1	9	1.14	0,007
Belief in an unjust world	10.9±4.97	9	8.96±3.7	8	2.57	0,001
Total LOCS	115.12±26.57	116	98.83±25.21	96	19.92	<0,001

Discussion and Implications

The new Turkish nursing students, or mentees, Locus of Control scores changed in a positive direction following the mentorship program. Their second LOC score suggested that students showed more internality than reported in the first score. This was a different observation from Ewen's³⁹ longitudinal 2 year study of associate degree nursing students' relationship to self-esteem, LOC, anxiety, critical thinking and academic achievement. Ewen's³⁹ study used four measurements of LOCS, and it revealed that students experienced significant positive changes. On their second LOC testing, the mean score was the highest suggesting that students were most externally oriented at this time. There was a significant change toward being more internally oriented from the second time period to the third and fourth periods. Some possible explanations for this is that Turkish mentees were much younger than their foreign counterparts^{37,38} and most were leaving the family home for the first time.

In the Turkish study peer mentoring seems to accelerate the process of developing an internal Locus of Control. This study parallels findings of a peer mentorship program, reported by Bulut et al.⁴⁰ They also found significant changes in LOC scores of first year nursing students. As Dawson¹ emphasized, introducing new experiences has the potential for changing a person's locus of control orientation. Peer mentorship, as an early and new experience for developing an internal LOC in new nursing students, can move them toward empowerment and offer them the ability to take charge of their lives. This is critical for Turkish students where new students are faced with new and different problems including their indecision about whether to be a nurse. This is especially relevant when university counselling services are limited and nursing faculties are scarce. This study provides a positive step towards empowerment and is promising as a supportive intervention early in nursing education. The practice of mentorship has positive influences on mentee with mentor reporting a similar positive influence on themselves.

The mentorship experience provides an active learning method/milieu for seniors since it is self-directed, but it also presents a major challenge for them. These students felt the

impact of their own poor study habits, exam skills, reading comprehension as well as inadequate goal setting, and underdeveloped time management skills, all of which are within the senior practice requirements.

Teaching by being a role model, as a nurse and self-directed person, creates an impact on new nursing student and a challenge to the senior student. Dawson¹ supports the idea that during transition to the complex world of nursing practice, new students try to question their own personal identities and whether they fit within the profession or not. Weis & Schank³⁵ listed presuppositions concerning value formation in the nursing profession and noted that mentorship by individuals who have internalized professional values facilitates the development of professional values and commitment in others.

Senior students' encouragement in problem solving and other professional experiences supported new students who needed to make decisions. Senior students acted as role models, in this respect, for their mentees. Howard's⁴¹ study presents evidence suggesting that the new university students who identified role models had a stronger internal LOC than the students who did not identify role models. Therefore, a peer mentorship experience might have a positive effect by providing role models for new students.

In Turkey nurses often report feelings of helplessness, a poor image, low status and powerlessness⁴³ things that can be seen as consequences of a professional and traditional culture regarding women's roles. These are not specific to Turkish nurses, however⁴⁴.

With an internal LOC, the student nurse tends to increase efforts when performance does not meet the standards, especially with multiple role engagements, and presents empowerment instead of helplessness. Over time, the shift to an internal LOC may help to change the image of "nurses are an oppressed group"⁴² and reduce the need for recognition from others (externality).

Peer mentorship programs are important in that they allow students to become aware of the control they have over their own personal lives. With an increased perceived ability to achieve outcomes, students can put more effort into becoming independent and adapting to the university and nursing life. This is an important aim of having peer mentoring for the students during the first year at the university. Interestingly, the greatest difference in pre and post test results was observed in "Personal control" which is internal control, beliefs regarding health, decision-making, and life experiences. The smallest difference in pre and post test results was observed in the area of "Belief in fate". In other words, peer mentorship seemed to have little impact on beliefs about fate. Fate is the belief that things in life are predetermined⁴⁵ and may be related to the idea that students' lives are in the grip of powerful others and beyond their personal control.

In spite of increased internal LOC, ten to twenty percent (10-20%) of the new students had scores in the subscales that indicated an increased external locus of control. This finding needs further investigation during the educational process. In the event that new findings are still similar, the students with an increased external LOC should get close counselling from the nursing faculty and their achievement should be monitored. On the other hand, this observation could simply be a sign of mentee's already having an internal LOC.

Statistical results did not measure the impact of senior students as role models, however, verbal reports from mentees described the positive impact of mentors. This information was gathered during class meetings with mentees. Overall, both the senior and new nursing students in the study expressed positive views about the peer mentorship

experience. One of the difficulties noted by most of the students was the problem of scheduling meetings with mentor and mentee outside of class hours. Every senior reported a unique experience common noting the similarities and differences in human nature. Ethical principles were observed. Seniors had opportunities to learn through experience, and they reported enthusiasm, acceptance of and satisfaction with the program.

Future research, including a follow up study on Locus of Control with same students, could provide an insight into how LOC orientation changes with peer mentoring in nursing education.

Limitations

1. There was no control group for this study. Education in Nursing Course is a mandatory course and every senior nursing student should get involved mentoring relationship with their mentees, therefore they were very eager and enthusiastic to start a mentoring activity, similarly mentees were very passive to have a mentor since they were vulnerable for many problems.
2. On the other hand the Locus Of Control scores of mentees may get better without an intervention due to adjustments to the new environment.
3. Identical methods or tools were not used to identify mentees' needs. The needs of mentees were assessed by individual mentors. Thus, identified needs of mentees are limited to mentors assessments.
4. We recommend further studies to explore the effects of peer mentoring on mentee and mentor.

Conclusion

Realizing the difficulties and demands of providing a nursing education for students, it is a faculty responsibility to support them during the professional socialization process. In this study, a peer mentorship program had a favorable effect on new student's internal Locus Of Control. This experience opened up many learning opportunities for both new and senior students, and could be used in a nursing curriculum as a practicum in healthy populations. The peer mentoring program continues to be a part of Education in Nursing Course in the nursing program in our university.

References

1. Dawson M S. Using locus of control to empower student nurses to be professional. Nurs Forum 1994; 29 (4): 10-5.
2. Cameron WR. Mentoring and locus of control. Ph.D. dissertation, The University of Southern Mississippi, United States, Mississippi 2001; Retrieved June 4, 2008, from Dissertations & Theses: Full Text database. (Publication No. AAT 3013755).
3. Fox A, Stevenson L. Exploring the effectiveness of peer mentoring of accounting and finance students in higher education. Accounting Education 2006; 15(2): 189-202.
4. D'Abate C, Eddy E. Mentoring as a learning tool: enhancing the effectiveness of an undergraduate business mentoring program. Mentoring & Tutoring 2008; 16(4): 363-78.

5. Heirdsfield A, Walker S, Walsh K, Wilss L. Peer mentoring for first-year teacher education students: the mentors' experience. *Mentoring & Tutoring* 2008; 16(2): 109-24.
6. Aston L, Molassiotis A. Supervising and supporting student nurses in clinical placements: the peer support initiative. *Nurse Educ Today* 2003; 23(3): 202-10.
7. Sprengel A, Job L. Reducing Student Anxiety by using clinical peer mentoring with beginning nursing students. *Nurs Educ* 2004 November/December; 29(6): 246-50.
8. Childs JC, Sepples SB, Moody KA. Mentoring youth: A service-learning course within a college of nursing. *J Nurs Educ* 2003; 42(4): 182-5.
9. D'souza AJ, Hamilton M, Harland J, Muir P, Thevathayan J, Walker C. Transforming learning of programming: A mentoring project. *Proc. Tenth Australasian Computing Education Conference (ACE2008)*, Wollongong, Australia. *Conferences in Research and Practice in Information Technology (CRPIT)* 2008; 78: 75-84.
10. Rodger S, Tremblay PF. The effects of a peer mentoring program on academic success among first year university students. *Can J High Educ* 2003; 33(3): 1-18.
11. Scott ES. Peer-to-peer mentoring teaching collegiality. *Nurs Educ* 2005; 30(2): 52-6.
12. Glass N, Walter R. An experience of peer mentoring with student nurses: Enhancement of personal and professional growth. *J Nurs Educ* 2000; 39(4): 155-60.
13. Forehand RK. The art and science of mentoring in psychology: A necessary practice to ensure our future. *Am Psychol* 2008; 63(8): 744-55.
14. Kunich JC, Lester RI. Leadership and the art of mentoring: Tool kit for the time machine. *J Lead & Org Stud* 1999; 6 (1-2): 17-35.
15. Colalillo G. Mentoring as a retention strategy in a diverse, multicultural, urban associate degree nursing program. *Teaching and Learning in Nursing* 2007; 2(2): 28-33.
16. Rotter JB. Generalized expectancies for internal versus external control of reinforcement. *Psychol Monogr* 1966; 80 (1,Whole No 609).
17. Hampson SE. *Constructs of Personality*. Florence, KY, USA: Routledge; 1988.
18. Abouserie R. Sources and levels of stress in relation to locus of control and self-esteem in university students. *Educational Psychology* 1994; 14 (3): 323-30.
19. Carden R, Bryant C, Moss R. Locus of control, test anxiety, academic procrastination, and achievement among college students. *Psychol Reports* 2004; 95: 581-2.
20. Neck C. *Self-leadership*. Bradford, UK: Emerald Group Publ. Limited; 2006.
21. Libert Y, Merckaert I, Reynaert C, Delvaux N, et al. Physicians are different when they learn communication skills: influence of the locus of control. *Psycho-Oncology* 2007; 16: 553-62.
22. Dufault M. Changing the locus of control of registered nurse students with a Futuristic oriented course. *J Nurs Educ* 1985; 24(8): 314-20.
23. Neaves JJ. The relationship of locus of control. to decision making in nursing students. *J Nurs Educ* 1989; 28(1): 12-7.
24. Ponto MT. Relationship between students locus of control and satisfaction. *Br J Nurs* 1999; 8 (3): 176-81
25. Tschikota S. The clinical decision-making processes of student nurses. *J Nurs Educ* 1993; 32(9): 389-98.
26. Wishart J, Ward R. Individual differences in nurse and teacher training students' attitudes toward and use of information technology. *Nurs Educ Today* 2002; 22(3): 231-40.
27. Ofori R, Charlton JP. A path model of factors influencing the academic performance of nursing students. *J Adv Nurs* 2002; 38(5): 507-15
28. Leontopolou S. Resilience of Greek youth at an educational transition point: the role of locus of control coping strategies as resources. *Soc Indic Res* 2006; 76 (1): 95-126.

29. Kukul K., Buldukoglu K., Kulakaç Ö, Köksal CD. The effects of locus of control, communication skills and social support on assertiveness in female nursing students. *Soc Behav Pers* 2006; 34 (1): 27–40.
30. Lin YR, Shiah IS, Chang YC, Lai TJ, et al. Evaluation of an assertiveness training program on nursing and medical students' assertiveness, self-esteem, and interpersonal communication satisfaction, *Nurs Educ Today* 2004; 24 (8): 656–65.
31. Karayurt O, Dicle A. The relationship between locus of control and mental health status among baccalaureate nursing students in Turkey. *Soc Behav Pers* 2008; 36 (7): 919–30.
32. Günüşen NP, Üstün B. (in Turkish) The relationship between problem solving skills levels and locus of control in nursing students, *Dokuz Eylul University School of Nursing Electronic Journal* 2011; 4(2): 72-77. URL:http://www.deu.edu.tr/UploadedFiles/Birimler/18451/72-77_gunusen.pdf November 03, 2012.
33. Lease SH. Effect of locus of control, work knowledge, and mentoring on career decision-making difficulties: Testing the role of race and academic institution. *J Career Assess* 2004; 12(3): 239–54.
34. Abaan S, Bulut H, Cihangir N. The Effect of Counseling Program on the Locus Of Control of First Year BsN Students. I. International & V. National Nursing Education Congress; 2001 September 19-22; Nevşehir Turkey. Congress Book Bilmedya Group: 2003. p. 219–220.
35. Weis D, Schank MJ. Professional values: key to professional development. *J Prof Nurs* 2002; 18(5): 271–5.
36. Dag I. (in Turkish) Locus of control scale: scale development, reliability and validity study. *Turkish Journal of Psychology* 2002; 17(49): 77–92.
37. Adib-Hajbaghery M, Dianati M. Undergraduate nursing students' compatibility with the nursing profession. *BMC Med Educ* 2005; doi: 10.1186/1472–6920-5-25. Sept 10, 2008.
38. Kloster T, Hoie M, Skar R. Nursing students' career preferences: a Norwegian study. *J Adv Nurs* 2007; 59(2): 155–62.
39. Ewen LL. A longitudinal study of nursing students' self esteem locus of control anxiety critical thinking and academic achievements. Ph.D. Dissertation, University of South Florida 2001; Retrieved June 22, 2008, from Dissertations & Theses: Full Text database. (Publication No. AAT 3041104).
40. Bulut H, Hisar F, Demir SG. Evaluation of mentorship programme in nursing education: A pilot study in Turkey, *Nurs Educ Today* 2010; 30(8): 756–62.
41. Howard D. The Relationship of Internal Locus of Control and Role Models in Female College Students. Ph.D. diss., University of Texas at Austin 1996; URL:<http://www.dianehoward.com/Dissertation.htm> July 24, 2007.
42. Daiski I. Chancing nurses' dis-empowering relationship patterns. *J Adv Nurs* 2004; 48(1): 43–50.
43. Abaan S. Nursing image in Turkey. *J Nurs Sch* 2000; First quarter 32(1): 93.
44. Manojlovich M. Power and empowerment in nursing: looking backward to inform the future. *The Online Journal of Issues in Nursing* 2007; 12(1) URL: http://www.nursingworld.org/ojin/topic32/tpc32_1.htm August 25, 2007.
45. Ferguson E, Cox T. An implicit theory of perceived control. *European Psychologist* 1996; 1(4): 271–277.